

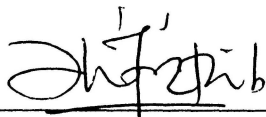
**REMOVAL OF CHROMIUM (VI) FROM AQUEOUS SOLUTIONS USING  
SILYLATED MCM-41**

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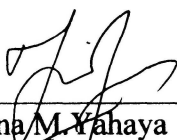
This Final Year Project entitled **“Removal of Chromium (VI) From Aqueous Solution Using Silylated MCM-41”** was submitted by Wan Saidatul Syida Wan Kamarudin, in fulfillment of the requirements for the Degree of Bachelor of Science (Hons.) Applied Chemistry, in the Faculty of Applied Sciences and was approved by



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## **ABSTRACT**

### **REMOVAL OF CHROMIUM (VI) FROM AQUEOUS SOLUTIONS USING SILYLATED MCM-41**

Heavy metal pollution has become one of the environmental problems which cause several diseases either to human, animal or plant. In this study, siliceous MCM-41 was modified by silylation using trimethylchlorosilane (TMCS). It was also investigated as an alternative low cost absorbent for the removal of hexavalent chromium from aqueous solution. The contact time required to obtained the maximum removal of hexavalent chromium was 90 minutes at the concentration of 20 mg/L. The percentage removal increased with the decreasing of pH and increasing of adsorbent dosage. However, the percentage removal is inversely proportional with the increasing of temperature which showed that this reaction is a exothermic reaction. The data on hexavalent chromium fit well on Langmuir compared to Freundlich. This study indicates that silylated MCM-41 has the ability to remove hexavalent chromium from aqueous solution.